REMARKS

Claim 10 has been canceled. Claims 3-8 and 24 have been amended. Therefore, claims 3-9 and 11-24 are pending in the case. Further examination and reconsideration of pending claims 3-9 and 11-24 are hereby respectfully requested.

Section 102 Rejections

Claims 3-9, 11, 15-18, and 20-24 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,150,313 to van den Engh et al. (hereinafter "van den Engh"). As will be set forth in more detail below, the § 102 rejections of claims 3-9, 11, 15-18, and 20-24 are respectfully traversed.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), MPEP § 2131. The cited art does not disclose all limitations of the currently pending claims, some distinctive limitations of which are set forth in more detail below.

The cited art does not teach a buffer adapted to store data for successive sampling periods in different data storage areas with substantially zero dead time and a processor adapted to process the data from the different data storage areas of the buffer at a rate that is determined based on a signal-to-noise ratio or value of the data. Amended independent claim 3 recites, in part:

> at least one buffer...adapted...to store the data for each of the successive sampling periods in different data storage areas with substantially zero dead time...and at least one processor connected to said at least one buffer, wherein the at least one processor is adapted to receive and process the data from the plurality of data storage areas of said at least one buffer, and wherein the at least one processor is further adapted to process the data from the plurality of data storage areas at a rate that is determined based on a signal-to-noise ratio or value of the data from the plurality of data storage areas.

Amended independent claims 5, 7, and 24 recite similar limitations. Support for the amendments to these claims can be found in the Specification, for example, in paragraphs 0057 to 0062.

The Final Office Action states that "Engh et al. do not teach processing data at a rate that is determined based on a signal-to-noise ratio of the data in the storage areas." (Final Office Action -- page 4). Therefore, van den Engh does not teach a buffer adapted to store data for successive sampling periods in different data storage areas with substantially zero dead time and a processor adapted to process the data from the different data storage areas of the buffer at a rate that is determined based on a signal-to-noise ratio or value of the data, as recited in claims 3, 5, 7, and 24.

For at least the aforementioned reasons, claims 3, 5, 7, and 24 are not anticipated by the cited art. Therefore, claims dependent therefrom are not anticipated by the cited art for at least the same reasons. Accordingly, removal of the § 102 rejections of claims 3-9, 11, 15-18, and 20-24 is respectfully requested.

Section 103(a) Rejections

Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over van den Engh in view of U.S. Patent No. 4,091,367 to Harman (hereinafter "Harman"). Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over van den Engh in view of U.S. Patent No. 5,556,764 to Sizto et al. (hereinafter "Sizto"). Claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over van den Engh in view of U.S. Patent No. 5,250,856 to Burton et al. (hereinafter "Burton"). Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over van den Engh in view of U.S. Patent No. 5,325,509 to Lautzenheiser (hereinafter "Lautzenheiser"). Claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over van den Engh in view of U.S. Patent No. 6,285,377 to Greenbaum et al. (hereinafter "Greenbaum"). Claim 10 has been canceled thereby rendering its rejection moot. As will be set forth in more detail below, the §103(a) rejections of claims 12-14 and 19 are respectfully traversed.

To establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP 2143.03. Obviousness cannot be established by combining or modifying the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion or incentive to do so. *In re Bond,* 910 F.2d 81, 834, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990).

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The cited art does not teach or suggest all limitations of the currently pending claims, some distinctive limitations of which are set forth in more detail below.

The cited art does not teach or suggest a buffer adapted to store data for successive sampling periods in different data storage areas with substantially zero dead time and a processor adapted to process the data from the different data storage areas of the buffer at a rate that is determined based on a signal-to-noise ratio or value of the data, as recited in claim 7. For at least the reasons set forth above, van den Engh does not teach these limitations of claim 7. The Final Office Action suggests combining Harman with van den Engh to overcome deficiencies contained therein. In particular, the Final Office Action states that "Harman teaches a variable signal to noise ratio threshold used to determine whether to process signals received by a detector (col. 7, lines 50-59)." (Final Office Action -- page 4).

Harman discloses a perimeter surveillance system. However, Harman does not teach or suggest processing data at a rate that is determined based on a signal-to-noise ratio or value of the data. For instance, Harman states that "The false alarm rate and probability of detection which can be obtained with this system are directly related to the signal-to-noise ratio at the threshold detector. By varying the threshold for a fixed signal-to-noise ratio the standard tradeoff between false alarm and probability of detection can be achieved." (Harman -- col. 7, lines 50-55). Therefore, Harman teaches that the signal-to-noise ratio is fixed for this system. In addition, Harman teaches setting the threshold for a fixed signal-to-noise ratio to balance the tradeoff between a threshold value that is high enough to sufficiently reduce false alarms and that is low enough for sufficient detection. Detector signals that have a value above the threshold will be processed by the system of Harman. As such, the rate at which data is processed by the system of Harman depends on the value of the threshold and the rate at which values above the threshold are detected. Consequently, the system of Harman is not adapted to process data at a rate that is determined based on a signal-to-noise ratio or value of the data. As a result, Harman cannot be combined with van den Engh as suggested in the Final Office Action to overcome the deficiencies in the teachings of van den Engh.

Sizto, Burton, Lautzeneiser, and Greenbaum all teach some device or method for data processing. However, none of these references teaches or suggests a processor adapted to process data from different data storage areas of a buffer at a rate that is determined based on a signal-to-noise ratio or value of the data, as recited in claim 7. Therefore, none of the remaining

cited art can be combined with van den Engh to overcome the deficiencies in the teachings contained therein.

Furthermore, even if the cited art or any other prior art taught or suggested a processor adapted to process data from different data storage areas at a rate that is determined based on a signal-to-noise ratio or value of the data, there is no suggestion or motivation to modify the teachings of van den Engh to overcome the deficiencies contained therein. For instance, van den Engh discloses that different particles and cells can exhibit different fluorescence brightness and therefore different fluorescence signal-to-noise ratios. (van den Engh -- col. 7, lines 16-18). However, van den Engh does not teach or suggest processing the data at a rate that depends on this or any other signal-to-noise ratio or value.

In particular, van den Engh states that "The digitized values that belong to one particle are collected by digital circuitry and are presented as a compact data package on a special bus." (van den Engh -- col. 3, lines 65-67). van den Engh also states that "Since all light pulses from a given particle do not necessarily occur simultaneously, parallel pulse digitization requires circuitry that keeps track of the events and that gathers together the values that belong to each particle. Once the values have been properly correlated, they can be presented via a data bus to the computer that stores the data and to the units that make sort decisions." (van den Engh -- col. 4, lines 31-38). Therefore, the invention of van den Engh is configured to synchronize data from different channels such that data from the different channels is combined into a data package for an event. van den Engh also teaches processing all of the data in the package simultaneously. In addition, as is known by one of ordinary skill in the art, a particle or an event may exhibit different signal-to-noise values and different values in different channels of a flow cytometer. Therefore, van den Engh teaches processing synchronized data from different channels simultaneously regardless of the signal-to-noise ratio or value of the data from the different channels. Consequently, van den Engh does not teach or suggest processing data from different data storage areas at a rate that is determined based on a signal-to-noise ratio or value of the data.

Moreover, modifying the system of van den Engh such that the system processes data at a rate determined based on a signal-to-noise ratio or value of the data can disrupt the timing and synchronization of the prior art system. Therefore, such a modification can change the principle of operation of the system of van den Engh. If the proposed modification or combination of the

prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). MPEP 2143.01.

van den Engh further states that "It is a further object of the invention to provide an improved correlation between events including coherence and synchronization in a multichannel pulse processing system." (van den Engh -- col. 2, lines 28-31). Since modifying the system of van den Engh such that data is processed at a rate determined based on the signal-to-noise ratio or value of the data can disrupt synchronization of the system, such a modification can render the invention of van den Engh unsuitable for its intended purpose. As such, there is no suggestion or motivation to modify the teachings of van den Engh to overcome deficiencies contained therein. If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). MPEP 2143.01.

van den Engh further discloses that there are several advantages to processing data in a package that contains data for a single event generated at different times. For instance, van den Engh states that "There is a fixed interval between the time a particle enters the first laser beam and the time digitized values appear on the bus. This makes it possible to use the values on the bus for sort decisions. Since the data package contains all the information needed for sorting, 'look-up table' sorting is easily implemented." (van den Engh -- col. 13, lines 3-8). van den Engh further states:

> An acquisition system with buffered parallel input channels that merge onto a common data bus offers great advantages for cell sorting. Despite the random, asynchronous nature of the incoming pulses, the data can be sent via the bus in well-defined, synchronized packages. Event classification and sorting can be done by circuits that read those packages from the bus. Since the sorting is done by dedicated hardware, it can proceed at very high speed. The classification and sort process itself can be divided into parallel operations that can be carried out by parallel modules. The communication between these modules can also take place via the bus. Thus, the bus contains all the information concerning the pulse measurements and the sort decisions. (van den Engh -- col. 4, lines 39-52).

Therefore, since van den Engh teaches that advantages are imparted to the system by processing the data based on timing of the data, and since modifying the system of van den Engh such that the system processes data at a rate determined based on a signal-to-noise or

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value of the data can disrupt the timing and synchronization of the prior art system, van den Engh does not suggest the desirability of such a modification. Consequently, even if van den Engh can be combined with or modified by other prior art to overcome the deficiencies contained therein, the resultant combination or modification is not obvious. The mere fact that references _can_ be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). MPEP 2143.01.

For at least the reasons set forth above, claim 7 is patentably distinct over the cited art. Therefore, claims dependent therefrom are also patentably distinct over the cited art for at least the same reasons. Accordingly, removal of the § 103(a) rejections of claims 12-14 and 19 is respectfully requested.

CONCLUSION

This response constitutes a complete response to all issues raised in the Final Office Action mailed July 21, 2005. In addition, the art cited but not relied upon is not believed to be pertinent to the patentability of the present claims. In view of the remarks presented herein, Applicants assert that pending claims 3-9 and 11-24 are in condition for allowance. If the Examiner has any questions, comments, or suggestions, the undersigned earnestly requests a telephone conference.

The Commissioner is authorized to charge any required fees or credit any overpayment to deposit account number 50-3268/5868-02207.

Respectfully submitted,

Ann Marie Mewherter
Reg. No. 50,484
Agent for Applicant(s)

Daffer McDaniel LLP
P.O. Box 684908
Austin, TX 78768-4908
Ph: (512) 476-1400
Date: 9.21.05

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